

When fitted with two Siddeley Cheetah IX engines of 310 h.p. each, the standard power plant of the Anson, the maximum speed is 188 m.p.h. at 7,000ft., and the cruising speed 158 m.p.h. at 6,000ft. The machine carries a crew of three, one of whom is navigator and bomb aimer, the other wireless operator and rear gunner, and the pilot. Very large numbers of Ansons have been built for the R.A.F., and the type has been sold to five foreign Governments.

And now for some personal notes. Though Sir Alliott Verdon-Roe is no longer connected with the firm which bears his name, he still takes a keen sentimental interest in its products, as readers of his article will see from his reference to the future and his tribute to his "old friend Roy Chadwick."

Sir Alliott's name is perpetuated a second time in the newer Saunders-Roe, frequently contracted into Saro.

Although he has severed his connection with A. V. Roe and Co., that continuity of ideals which is so essential to success has been maintained by two old-timers who have been with the firm almost from the very beginning, and who now hold the responsible positions of chief designer and general manager respectively.

### Personal Sidelights

Roy Chadwick joined A. V. Roe as his personal assistant towards the end of 1911. He thus has shared (or disputed) what may be called the man Roe doctrine since Avro aeroplanes first began to be practical flying machines, and the pioneer spirit is in him as well as in his old chief. Chadwick became chief draughtsman in 1914, and was officially appointed chief designer just after the war, although there is little doubt that he was in fact, if not in name, chief designer some considerable time before that. As such, he has been responsible for all the Avro machines subsequent to and including the 504K, and has pioneered many original conceptions. For instance, shortly after the war he designed the little Avro Baby, the first successful light aeroplane. Chadwick also designed some of the first stressed-skin aeroplanes to be built in this country, such as the Avocet and the Antelope. He was responsible for the Ava of 1923. This machine was, we believe, the largest all-steel aeroplane built up to that time. In recent times Chadwick designed the Anson, which was the first machine of the modern formula (low-wing, twin-engined monoplane with retractable undercarriage) to go into quantity production for the R.A.F.

In the early days Roy Chadwick did much flying as observer in the Avro machines when they were taken up by F. P. Raynham for experimental and test flights. Some years ago he decided that he ought to learn to fly, but discovered that he was a much better designer than pilot. . . . For years after leaving hospital and nursing home he suffered for his misdirected enthusiasm, but the experience confirmed the belief which many have held for a long time—that there are many who are good pilots but few who can design successful aeroplanes.

While Chadwick has been looking after the design side the constructional and production problems of Avros have been equally effectively tackled by the other Roy, Mr. R. H. Dobson. "Dobbie" joined the firm in August, 1914, and by the end of 1918 he had become assistant works manager. About a year later he was appointed works manager, and in December, 1934, he took over the post of general manager. In 1936 he joined the board of directors.

At the Manchester works of A. V. Roe and Co., Ltd., "Dobbie" has built more aeroplanes than he can remember. First there was the famous 504 and all its variations, combinations and permutations; in more recent times the Tutor, produced in large numbers as a training type; and during the last few years hundreds of Ansons have left the factory at Newton Heath. A start is now being made on a large batch of Bristol Blenheims, but the modern forms of construction hold no terrors for "Dobbie," even if he does not necessarily agree with them. He has his own ideas on the subject, and they are well worth listening to. Aircraft production is generally held to be one of the most worrying pastimes in which a man may indulge. Mr. Dobson has never let his troubles get the better of him, and the "Dobbie smile" seen in the portrait on p. 30 was not put on for our especial benefit. It is familiar throughout the British aircraft industry.

Under the merger which took place in July, 1935, the Hawker-Siddeley Aircraft Co., Ltd., acquired the whole of the ordinary share capital of the Armstrong Siddeley Development Co., Ltd., and 50 per cent. of the total issued ordinary share capital of Hawker Aircraft, Ltd. Among the firms controlled by the Armstrong Siddeley Development Co., Ltd., was that of A. V. Roe and Co., Ltd., so that the firm now belongs to the group which includes, in addition to those mentioned, Armstrong Whitworth Aircraft, Armstrong Siddeley Motors, and the Gloster Aircraft Co., Ltd.

## CARBURETTORS in PRODUCTION

THE elementary form of carburettor is a thing of the past for medium- or high-powered aero engines, and the skill required in the assembly of the parts for a modern example (which amount in some cases to as many as eight hundred), is akin to that of a watchmaker. A visit to the works of Claudel-Hobson shows that complications of many kinds have arisen and been provided for, and now, disposed round the float chambers one finds such accessories as delayed-action accelerator pump, three-stage automatic mixture control, and automatic boost control. These automatic controls are similar in construction, having sliding valves controlled by an aneroid with either single composite or separate bellows. In the case of the boost control the aneroid chamber is connected to the induction system and for the mixture control it is open to the atmosphere.

Life for Claudel-Hobson carburettors commences in the aluminium foundry beside the works at Wolverhampton. Sand castings of L.33 silicon alloy, chosen for its strength and anti-corrosion properties, pass into the works and are roughly fettled before machining of the faces is commenced (simple covers and small alloy parts are die-cast elsewhere). From then until assembly the main casting is subjected to a multitude of drilling, boring, milling, and polishing operations, and studs, inserts and liners are fitted. Enamelling is one of the later operations prior to assembly.

Many strange shapes of cork float, some almost surrealistic in design, are to be seen and all receive the same treatment. First are applied two coats of fuel-resisting dope, having the familiar amyl acetate smell. These are followed by drilling for attachment to the brass frame. Brass tubes are inserted down the holes and the frame is then riveted on to the cork, using copper rivets passed through the tubes. Finally, no

fewer than ten more coats of dope are applied. In the most recent carburettors for large engines, automatic boost and mixture controls have been cast integrally with the main casing. A cut-out for the slow-running jet, to prevent a hot engine from firing after switching off, is part of the whole, while in the choke tubes the diffusers are now a carefully streamlined bulge in the casting, in contrast to the projecting brass pipes on earlier models.

When one sees a carburettor on test under operational conditions the terrific rush of induction mixture leaves no doubt as to the need for streamlining of any projection in the choke tubes. The apparently vast petrol consumption (40-50 gal./hr.) of high-power engines as compared with modest figures for road vehicles can more easily be conceived after observing the flow of petrol from the diffusers of aircraft carburettors.

### Turkey Not Out of Step

THE Turkish Government has recently introduced a Bill appropriating £1,500,000 for the modernisation and expansion of the Turkish Air Force. Probably not unconnected with this Bill is the fact that Mr. B. Stephan, who resigned his post as general manager of Fokkers in Holland two or three years ago to become technical advisor on air matters to the Turkish Government, has been asked to renew his contract, and has done so. His friends all over Europe will be glad to know that the new contract includes a provision for a tour of Europe to study the latest developments, so that they will all have a good chance of meeting "Step" during the next year or so.